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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,416	06/02/2006	Philip Rogers	11034-0026US	3728
22902 7590 05/13/2009 CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005				
EXAMINER NGUYEN, PHILLIP				
ART UNIT 2828		PAPER NUMBER		
MAIL DATE 05/13/2009		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/581,416

**Applicant(s)**

ROGERS ET AL.

**Examiner**

PHILLIP NGUYEN

**Art Unit**

2828

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/08/2009 has been entered.

***Response to Arguments***

Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuki et al. (US 20050185683) in view of Richardson et al. (US 20030156605).

With respect to claims 1-2 and 4, Ohtsuki discloses the claimed invention as follows:

FIG. 1

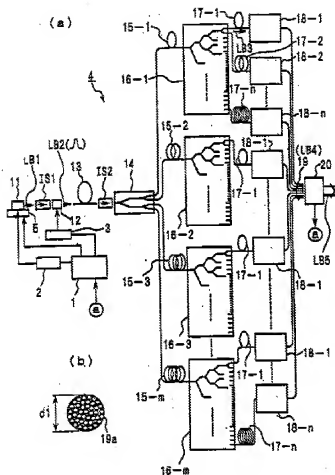


FIG.2

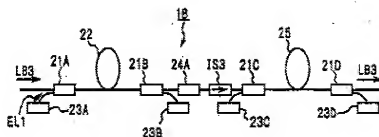


Fig. 1 illustrates a high power, integrated fiber laser amplifier comprising a seed laser 11 producing a seed pulse and one or more power amplifier stages comprising:

means for providing light seed pulses at a repetition frequency rate less than 1 MHz (paragraph 0076),

a fiber preamplifier 13 receiving and amplifying the seed pulse, said fiber preamplifier having a first core diameter;

a splitter 14/16 arranged to receive light from said preamplifier and split said light into a plurality of channels, a plurality of fiber power amplifiers 18-1 to 18-n, and

means 20 for coupling each of said fiber preamplifier channels to a respective one of said fiber power amplifier amplifiers.

It's noted that Fig. 2 illustrates structure of the optical amplifiers 18-1 to 18-n with fiber amplifiers 20.

However, Rice does not explicitly teach each of the plurality of fiber power amplifier comprises comprising a low numerical aperture, coiled clad fiber, having a core diameter larger than said first core diameter.

Richardson discloses a similar high power stage amplifier as shown in Fig. 1 and discussed in the previous Office Action. However, since the amended claims further includes a beam splitter and more than one power amplifier. Richardson is not qualified as a stand-alone prior art. However, Richardson is still a solid reference regarding the claimed invention. In this case, Richardson teaches the missing part of the Rice with respect to the claim which is the clear advantage of having a low numerical aperture, coiled clad, and larger core diameter than that of the preamplifier in order to reduce the distortion (see paragraph 0157). Richardson further discloses the numerical aperture being between 0.06-0.08.

It would have been obvious to one skill in the art at the time the invention was made to provide the fiber power amplifiers with low numerical aperture and larger core diameter than that of the pre-amplifier because the high end power amplifier should have higher power than the pre-amplifier.

With respect to claim 4, Richardson further discloses first means 78 for pumping the preamplifier, and second means 112 for pumping said fiber power amplifier, and means for synchronizing the seed pulse with said first and second means for pumping to reduce ASE (paragraphs 0031, 0145-0146).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuki et al. (US 20050185683) view of Richardson et al. (US 20030156605) and further in view of DiGiovanni et al. (US 5864644). Ohtsuki and Richardson disclose the claimed invention except for a tapered fiber bundle. DiGiovanni discloses in Figures 7A-H tapered fiber buddies to connect to the cladding of the fiber amplifier for directing pump energy into the cladding. It would have been

obvious to the one having ordinary skill in the art at the time the invention was made to provide the tapered fiber bundle as taught by DiGiovanni to Richardson and Ohtsuki in order to couple fiber to the fiber amplifier more efficient.

### ***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phillip Nguyen/

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/Minsun Harvey/

Supervisory Patent Examiner, Art Unit 2828